

Facility Maintenance Management Competency 4.12

Competency 4.12 Facility maintenance management personnel shall demonstrate the ability to conduct independent assessments of the contractor's maintenance training and qualification program(s) in accordance with DOE Order 4330.4B, Maintenance Management Program, and DOE Order 5480.20, Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities.

1. Supporting Knowledge and Skills

- a. Conduct an evaluation of a contractor training and qualification program to verify that qualification requirements have been specified for job categories.
- b. Given a work activity that requires special skills or abilities, verify that personnel are qualified prior to performing the work.
- c. Assess a work activity requiring specific qualifications to verify that sub-contractors performing the work are qualified to the same level as contractor personnel.
- d. Assess the instructor qualifications for a selected maintenance training program to verify that instructors have the necessary credentials and skills to provide the training.

NOTE: DOE Order 5480.20 was replaced by DOE Order 5480.20A.

2. Self-Study Activities

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://wastenot.inel.gov/cted/stdguido.html	DOE Standards, Guides, and Orders
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

EXERCISE 4.12-A Review the self-study activities listed in Facility Maintenance competency 2.2 for an overview of the training and qualification requirements.

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Read Chapter II, Section 3, of DOE Order 4330.4B, *Training and Qualification of Maintenance Personnel*.

EXERCISE 4.12-B List the four points for performing a review of contractor qualification as noted in DOE Order 4330.4A, *Maintenance Management Program*, Chapter II, Section 3.3.5.

Review Attachments 28, 29, 31, 34, 35, 38, 39, 41, 42, and 48 of DOE-HDBK-1078-94, U.S. Department of Energy, *Training Program Handbook: A Systematic Approach to Training*.

Read pages 41 through 43 of DOE-STD-1070-94, U.S. Department of Energy Standard, *Guidelines for Evaluation of Nuclear Facility Training Programs*.

EXERCISE 4.12-C Using DOE-STD-1070-94, pages 41 through 43, list the seven criteria identified for training program evaluation.

3. Summary

The facility's training organization and programs should be evaluated periodically to determine whether they are achieving the established goals and objectives. The effectiveness of training programs to produce qualified personnel should also be evaluated periodically. This should be accomplished by reviewing operating occurrences, interviewing job incumbents and first-line supervisors, observing operations, etc. The results of these evaluations, if used correctly, will help assure a facility of safe, efficient, and reliable operations.

The following considerations should be emphasized when evaluating training and qualification programs:

- Responsibility for monitoring indicators, analyzing data, and approving revisions is clearly defined.
- The training department is alerted to facility operating, maintenance, and industrial safety experiences in a systematic manner.
- Communication on training effectiveness occurs regularly between plant supervisors and the training department.
- Employee opinion of the quality and effectiveness of training is collected periodically and analyzed to identify opportunities for improvement.
- The training department is alerted to employee performance errors that may indicate a problem with the training program, or an opportunity to initiate further training.
- The training department meets periodically with maintenance and operations, supervisors and engineers to determine potential training problems.
- Training uses facility inspection and evaluation reports to guide program revisions.

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- Facility modifications and procedure changes are monitored for training consequences.
- Training monitors industry operating and maintenance experiences for program impacts.
- Regulatory changes are reviewed for training consequences.
- Program performance data is analyzed to identify trends which may impact, or be impacted by training.
- Proposed changes are reviewed by appropriate facility and training personnel.
- Training changes are tracked in a systematic manner.

Evaluation of a technical training and qualification program activity typically includes the following criteria, as a minimum:

Evaluation of a Technical Training and Qualification Program	
Criteria	Applications
Are the materials prepared at a level of skills and knowledge appropriate to the trainees?	Determine whether material content can be related to expected entry-level skills and knowledge, including appropriate reading level of the trainees.
Are the materials clearly written and presented so the trainee can complete the required learning activities?	Determine whether selected trainees can use the materials and complete the learning activities.
Do the materials reflect the learning objectives of the desired program?	Assess the material, comparing the learning objectives to those of the desired program, and determine which learning objectives are not adequately covered.
Are the materials consistent with other materials used in the training program or the mastery of the learning objectives?	Analyze sets of materials to determine whether they are supportive and provide an effective progression of learning.
Do the materials conform to the learning activities of the desired program?	Analyze the materials, comparing the learning activities to those of the desired program. Identify any deficiencies.
Are the materials practical for use in the given facility situation?	Determine whether the materials can be used in facilities with available equipment, time, and space, and with the number of trainees planned.

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4. Exercise Solutions

EXERCISE 4.12-A Review the self-study activities listed in Facility Maintenance competency 2.2 for an overview of the training and qualification requirements.

ANSWER 4.12-A Refer to exercise solutions listed in Facility Maintenance competency 2.2.

EXERCISE 4.12-B List the four points for performing a review of contractor qualification as noted in DOE Order 4330.4A, *Maintenance Management Program*, Chapter II, Section 3.3.5.

ANSWER 4.12-B In conjunction with the training organization, maintenance management should review an individual's training accomplishments prior to qualifying him for a given task. A similar method should be established to review the qualification of contractor personnel. This review should include the following:

- Verifying completion of all designated prerequisite training
- Conducting or evaluating the results of a final written, oral, or practical demonstration examination and evaluating the recommendations of the individual's supervisors
- Interviewing the individual regarding the knowledge and skill he has acquired (not as a verification to total expertise and proficiency but as an indicator of competency upon which to build)
- Formal qualification approval and documentation

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EXERCISE 4.12-C Using DOE-STD-1070-94, pages 41 through 43, list the seven criteria identified for training program evaluation.

ANSWER 4.12-C

Criteria for Training Program Evaluation as noted in DOE-STD-1070-94	
Criteria	Statement
8.1	A comprehensive evaluation of individual training programs is conducted by qualified individuals on a periodic basis to identify program strengths and weaknesses.
8.2	Instructional skills and technical competencies of instructors are evaluated regularly.
8.3	Feedback from trainee performance during training is used to evaluate and refine the training program. Feedback from former trainees and their supervisors is used to evaluate and refine the training program.
8.4	Change actions (e.g., procedure changes, equipment changes, facility-specific and operating experience) are monitored and evaluated for their applicability to initial and continuing training programs and are incorporated in a timely manner. Changes in job scope are evaluated to determine the need for revision of initial and continuing training programs.
8.5	Improvements and changes to initial and continuing training are systematically initiated, evaluated, tracked, and incorporated to correct training deficiencies and performance problems.
8.6	Training materials are maintained current, based upon the results of training program evaluations.
8.7	Training facilities are evaluated to determine their effect on the training process.